

17. EXPERIMENTS ON A CAPTIVE MUNGOOSE WITH BIRD-FOOD. WARNING CHARACTERS AND DISTASTEFUL QUALITIES IN SOUTH AFRICAN BIRDS. (G. A. K. M.)

[Although this section is strictly speaking outside the scope of the present memoir, it is so closely associated that I have ventured to include it.

Mr. Frank Finn noticed that his mungoose, *Crossarchus fuscatus*, "appeared to be unwilling to attack birds, though it did not seem to find them unpalatable" ("Natural Science," vol. i, No. 10, December 1892, p. 746).—E. B. P.]

Salisbury, Jan. 24, 1900.—I have been recently giving my mungoose some wild birds, and I was much interested to note the result. It ate a dove (*Turtur capicola*), standard wing night-jar (*Cosmetorius vexillarius*), dwarf goose (*Nettapus auritus*), moorhen (*Gallinula chloropus*), and wheatear (*Sacicola pileata*); while it emphatically refused an owl (*Asio capensis*), kestrel (*Cerchneis rupicoloides*), buff-backed egret (*Herodias lucidus*), hobby (*Fulco subbutco*), and drongo (*Buchanga assimilis*). Its dislike of the smell of the common and conspicuous blue-and-black drongo was very marked, especially as it was hungry at the time, and I had plucked the bird clean; it made one or two attempts to eat the meat, but finally gave it up. In the case of this bird and the egret we would therefore seem to have a case of true warning coloration. This is also probably the case with the wood-hoopoes (*Irrisor* and *Rhinopomastus*), which are very conspicuous both in voice and colour—the latter being in both genera black shot with metallic dark-blue or green, with a large white speculum in the wing, and a long tail.

Salisbury, June 26, 1900.—As to distastefulness in birds I must further mention our wood-hoopoes, *Irrisor viridis* and *Rhinopomastus cyanomelus*, both of which emit a strong unpleasant smell. They are both metallic greenish-blue birds with long fan-like tails and a conspicuous white bar on the wings, differing principally in the shape and colouring of the beak. They are also both very noisy, frequently uttering their harsh, chattering cries, and especially when alarmed. Another bird which has well-known distasteful qualities is the ground horn-bill (*Bucorax caffer*). Indeed the Zulus use it on that account for rain-making; they will kill one and throw it into a river, for they say its smell makes the river sick, so that it calls

down the rain to enable it to wash the body away. This bird is black all over with only the primaries white, and is so weak on the wing that after three or four flights a good runner can run it down.

18. EXPERIMENTS ON *Cercopithecus pygerythrus*.  
(G. A. K. M.)

The following experiments were all made at one time, in February 1902, at Salisbury. The insects were offered in the following order:—

*Psiloptera chalcophoroides*: regarded with some suspicion; its head bitten off, and the remainder examined and eaten cautiously.

*Amblysterna vittipennis*: was offered and eaten at once.

*Praogena splendens*: was smelt and at once thrown away.

*Dichtha inflata*: was cautiously smelt and refused.

*Amblysterna vittipennis*: was regarded with great suspicion, carefully examined and then eaten slowly.

*Precis sesamus* (*natalensis* form): was received with suspicion and very slowly eaten.

*Precis pelusgis*, *P. sesamus* (*natalensis*), *Byblia achcloia*, and two *Precis antilope* were then eaten readily, but evidently not so much appreciated as the beetles.

*Acræa halali* was then accepted without suspicion, but when the monkey put it in his mouth, he at once took it out again and looked at it with the utmost surprise for some seconds, and then threw it away. He would have nothing to do with an *A. caldarena* which I then offered him.

[Mr. Marshall was greatly struck with the caution and hesitancy displayed by the monkey, and the evident effect of distasteful forms in causing suspicion of palatable species offered immediately afterwards. I have noticed the same thing with the marmoset ("Colours of Animals," London, 1900, pp. 241, 242).

The refusal of the two Heteromerous Coleoptera, the acceptance of the cryptic species, and the treatment of the Lepidoptera, are in general correspondence with the results obtained in other experiments.—E. B. P.]